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Institut for Economic
 Promotion,
 Austrian Economic
 Chamber,
 Vienna, Austria



T.E.I. Thessaloniki
 Greece



Department of Tourism
 Management

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THE ROLE OF CARRYING CAPACITY WITHIN CONCEPTUAL FRAMEWORK OF CONTEMPORARY TOURISM

Dobrica Jovicic

Vanja Ivanovic

University of Nis, Serbia

University of Rijeka, Croatia¹

Abstract: There is no doubt that theory of tourism lags behind increased tourism practice. In order to decrease such gap, theoretical work in tourism has been intensified during last two decades. The key problems focused as objects of research include: analysis, interpretation and management of heterogeneous tourism development effects, permeating different aspects of human life and work – from global to local level. Consequently, this paper discusses role, significance, and ways of estimation and interpretation of carrying capacity concept within the conceptual framework of contemporary tourism. The paper, also, analyses attitudes and conflicted opinions of certain authors regarding to the related concept that still remains an elusive and much debated concept. At the end of the paper, the crucial conclusions are presented, that can alleviate the application of carrying capacity concept in practice, assuming its important role in planning tourist destinations development and managing various tourism impacts.

Key words: carrying capacity, tourist destination, management.

INTRODUCTION

In many interpretation of conceptual tourist frame, attraction is drawn by the approach which headlines the importance of *tourist need, movement and spending* as constitutive tourist factors. Mathieson and Wall (2006) focus 3 key elements of tourist phenomena:

¹ **Dobrica Jovicic**, Ph.D., Assistant Professor, University of Nis, Faculty of Mathematics and Natural Sciences, Serbia, **Vanja Ivanovic**, M.Sc., Assistant, University of Rijeka, Faculty of Tourism and Hospitality Management in Opatija, Croatia.

- *dynamic element*, which includes making decision about tourist movement and choosing desirable destination that also include series of social, economic and institutional factors important for making this kind of decision;
- *element of tourist destination* includes staying of tourists on the place that represents the aim of his/her movement and interactivity of economic, social and natural subsystems of some place;
- *consequential element* comes from the two previous elements and it is present in economic, socio-cultural and natural-ecological effects which in the direct or indirect way affect the quality of experience that tourists have in some destination.

This conceptual frame is not conceived as the mean of prediction demand or creation of presentation of an offer strategy on the market. The aim of this approach is, in fact, to show the complex structure of tourist phenomena and complex interrelation of its segments. It is clear that all elements as changeable values inside the tourist system don't have the same meaning, or they don't have the same effect causing certain consequences, so they couldn't be expressed in the quantity way. But this mentioned conceptual frame is acceptable from the point of view of identification, contemplation and interpretation of the heterogenic influences of tourism from the following reasons:

- it poses the set of different factors, identifies their reciprocal relations and effect, with which it makes an image of nature, quality and an extent of effects caused by tourism;
- tourist influences last long period of time and they can be cumulative and they reciprocally penetrate;
- tourism influences result from the complex process of tourist interactivity, local communities in the receptive areas and natural, economic and socio-cultural environment;
- evaluation of influences includes all phases of tourist process, including making decision about movement, preparation for its realization, journey from and to some destination, staying there and memories of coming back to the place of staying;
- tourism influence can be revealed in different ways, and this is the reason why their valuation should be used by greater number of aggregate and partial measures.

This conceptual frame also respects the fact that those tourist influences are the result of the process of changes. Tourism influences don't have the character of individual, momentary or temporary event which is spatially and temporally explicitly connected to some particular object or manifestation. Even if the construction or hotel decoration, souvenir shop and ski tracks, e.g. is related to exact defined period of time and it has certain indirect consequences, mentioned contents represent only a part of wide processes of changes in the way of satisfying the cultural-recreational needs and development of tourist destinations.

The process of tourist development doesn't mean something that is unavoidable and has continuous character, because this kind of process can be stopped, can change its direction, can modify its character and can produce sudden and unpredictable consequences. Causes of changes of tourist development can be situated inside tourist system – changes, expectations, interests, competencies and aspiration of tourists and inhabitants of receptive areas; as well as the changes in the frame of subjects of tourist economy (agencies, hotels). On the other hand, the changes can be initiated or stimulated by the factors outside the tourist system on which the key agents of tourist process don't have any influence and it can't be controlled. These factors include mostly political and economic situations in emission and receptive areas, accessibility of energetic, moving of exchange rates on the market or even weather changing and climate. War in Iraq in 2003, then spreading of global terrorism, epidemic threats of dangerous diseases and similar things, influenced on many experts and institutions to move their research focus on the effects of those events on the tourist demands and creation of strategy of imperilled destinations recovery.

Tourism depends on spending and on usage of discreet income and time of an individual so any change of these factors produce serious repercussions on tourist economy. Having in mind that the participants of tourist movements show their needs and expectations in different ways, tourist market is fragmented in the way that even the influences on which some destinations are exposed are characterized bigger diversity. However, the diversity of tourist influences should be identified, in detail examined and anticipated, on which basis is possible to draw out valid conclusions, as the basis for making adequate management decisions and tracing of sustainable development. Starting from mentioned conceptual frame, in the next presentation we will take in consideration the role and importance of tourist destination and on evaluation of its *carrying capacity*.

CARRYING CAPACITY – MEANING, SIGNIFICANCE, POSSIBILITY OF PRACTICAL APPLICATION

The evaluation of carrying capacity is used as indicator of tourism influence on the space and life environment. It represents an important component of planning the space development of tourism and it is also one of the mechanisms for posing the standards of sustainable tourism. Carrying capacity could be defined *as maximal number of tourists who can stay on some space and use its contents without unacceptable and irretrievable exchange of natural-ecological environment, social, cultural and economic structure of one destination and decrease of quality of tourist experience*. Insight in disposable literature shows that many authors and institutions worked on this problematic and defining of carrying capacity of tourist destinations and particularly with those on tourist-recreational areas.

According the Federation of national parks in Europe, carrying capacity represents the capacity of ecosystem to self-preserve and stimulates development of human activities in unlimited extent, without negative feedback effects. World tourist organization defines 3 levels for evaluation of carrying capacity: ecological, socio-cultural and psychological capacity. In a similar way, carrying capacity explains Mitchell (1979) and O'Reilly (1986).

The conclusion that is obvious that even if extent explorations were dedicated to the theoretical approach towards carrying capacity, on the plan of practical application of this concept there are some difficulties. In spite the fact that the concept of carrying capacity is attractive and useful, experiences show that in the attempts of their practical application comes to abandoning, or exchanging of this approach with other concepts as: *limits of acceptable changes in a destination*, *systems of managing the visitors* etc. In practical application, the concept of carrying capacity should also include natural and human factor exchange/built environment but in recent researches dominates primary the connection and relation of carrying capacities and natural environment.

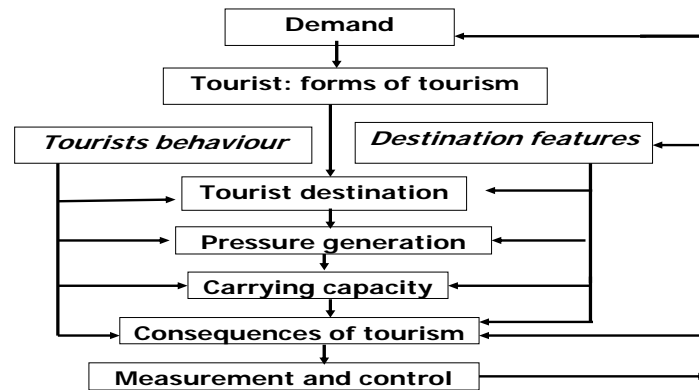
Carrying capacity, means even today characteristics of "uncatchable" concept about which there will be debates in the future and there will be many confrontations of different approaches of theoreticians. In observation of the problematic of sustainable development, it is noticed that tourism generates different negative effects which could imperil development perspectives on long-term where the carrying capacity is marked as useful frame for identification, observing and resolving the evident problems (O'Reilly, 1986). On the other hand, other authors propose using alternative and more flexible frame.

Butler (1999) disputes that defining sustainability of tourist development and concepts of carrying capacity are obligatorily connected. According to him, if sustainable development means respecting the needs of today's, without disturbance of needs of future generations, instead of carrying capacities it has to accentuate defining the limits of usage of tourist space, before coming of important decrease of quality of tourist resource basis or tourists' experience.

Long-time discourses about the concept of carrying capacity directed its attention on needs for clear and precise setting of tourist objectives and of evaluation of degree where they are realized. In fact, recreation area or tourist place don't have one permanent defined carrying capacity. The capacity is reflection of objectives which are fixed for some place or locality, and there is a need of specification of the nature of tourist experience which could be realized, as well as the acceptable level of modification of life environment. Setting and realization of objectives, undoubtedly, depend on factors as disposable material means, manager capabilities and etc.

MEASUREMENT AND EVALUATION OF CARRYING CAPACITY

Measurement of carrying capacity could imply tourist destination as a whole with all its contents or individual services and capacities. In both cases, the capacity has economic, physical and social attributes that could be measured. Each type of capacity could vary depending on destination, on natural-ecological characteristics of some area, on the way of its usage and of development objectives which should be realized. Every type of capacity is characterized the tolerance limits for destination as a whole or as separate objects and capacities. This kind of limit marks threshold of changes, and with the exceed tourism produces mostly negative effects. If the tolerance limit won't be exceeded, the effects of tourism could be generally estimated as positive.



Conceptual frame of tourism (adopted from: Mathieson, Wall, 2006)

Many researches made in the world, especially in the USA, with the aim of précising the procedure for calculation of carrying capacity and for making concrete formulas which would be suitable for certain type of destination. Beside that, there is no still reliable and scientifically proofed method for calculating the carrying capacity. This mostly comes from the different approach of setting the average standard of surface which belongs to the space user (including tourists, their activities and built capacities), which serves for calculation of carrying capacity. Many authors use different standards which they reach on the basis of empirical experiences. The experiences are different so the applicable standards are also different.

Capacities exist for each of economic, physical and social subsystems inside the system of a tourist destination. Ensure the space for shops and souvenir shops, restaurants, hotels or parking, could signify taking of space already occupied by the company or economic subjects whose activities are primarily assigned to satisfy the needs of domicile inhabitants, or of local market. In this aspect, it is very illustrative an example of one historical town in Britain whose major expressed his malcontent because in his town there were 3 department stores specialized in selling sweets, but there were no department store specialized in selling shoes. Here there is a need of evaluation of economic capacity that shows the possibility of absorption of tourist functions, without repressing demanded local activities or dramatic increasing of products' expenses or services assigned to domicile inhabitants. Damaging and decaying of historical objects or contamination of beaches because of inadequate treatments of waste waters show the situation when tourism exceeds upper level of physical or ecological capacity. Also, it is well known that the tolerance limits of domicile inhabitants toward staying and behaviour of tourists in some cases could be exceeded, which is manifested with unkindness toward visitors: here we are talking about exceeding of social carrying capacity.

Some authors figuratively remark that 'carrying capacity doesn't represent the aim but the mean with which we could reach the aim'. In other words, carrying capacity doesn't have to be considered as a spatial and time permanently defined size, but as an important instrument with which development of some tourist destination is directed. The

changes with which the destinations are faced in their development are unavoidable. The application of the concept of carrying capacity makes possible an effective and efficient evaluation of acceptability of degree and direction of changing that is brought by the tourism. It means that the carrying capacity is mostly the matter of manager considering, so the values of accuracy and validity of that considering are quite different, depending on place, interest and expectations of different interest stakeholders who participate in tourist process. It is certain that making valid managerial decisions in tourism should be based and emphasized by adequate scientific and research work and setting the successful monitoring system as basic prerequisite for modification of once made decisions.

KEY FACTORS OF INFLUENCE ON THE CARRYING CAPACITY

Capacity of tourist destination for absorbing the tourists' demands, from the one side and offer carriers, that is tourist economy, from the other side, depends on reciprocal relations of numerous and complex factors, and specially it depends on tourist's characteristics, destinations and its inhabitants. E.g. level of irritation of domicile inhabitants caused by tourists' staying could be increased in the cases when the traffic concentration is bigger which considers the packages with longer staying of guests, continuous demonstration of material superiority of visitors in relation to domicile inhabitants and to the choice of activities which bring to closer contact between local inhabitants and guests. Malcontent and repulsive attitude of hosts toward tourists could be expected in the destinations with highly developed traffic or limited inclusiveness of local community in the tourist development.

Having in mind all above mentioned, it could be told that the levels of capacity and tolerance limits coming from all that mostly depend on 2 factor groups: *characteristics of tourists and characteristics of tourist destination and its inhabitants.*

Characteristics of tourists which have implications on carrying capacity include:

- *Socio-economic and psychological characteristics.* It includes sex, age, income level, purchasing power, motivation, attitudes and expectations, perceptions of tourist attractions quality, racial and ethnic structure, tourists' behaviour etc. Revising all mentioned characteristics contribute and determinate impersonal communication between tourists and domicile inhabitants and between the tourists;
- *Level of usage.* Number of tourists and their distribution in space and time represent key parameters for level of usage evaluation of some tourist space;
- *Length of staying and season traffic;*
- *Type of tourist activities;*
- *Level of tourist's satisfaction.*

Each of mentioned tourists' characteristics has its own importance, importantly influencing on extent, frequency and type of interactivity with physical attributes of destinations and their inhabitants. It is important to notice that the level of usage it is not only the number of tourists because it could show wrong image about tourism

development. Very often the type of tourist activities and eventual conflicts between tourists of different needs, interests and expectations could be more important indicators of usage level of some tourist area about which the people who are making decisions have to pay attention about that.

Characteristics of destination which influence on carrying capacity include:

- *Natural-geographical characteristics and processes*: topographical, geomorphologic, hydrographical, petrography, climatic, biogeographical characteristics etc.;
- *Economic structure and development*. Here this means the level of economic development, diversity and interrelation of elements of economy basis, spatial characteristics of development, forms of investment, relation of import and export, costs of preparation and delivery of tourist services;
- *Social structure and organization*. This category includes: demographical profile of domicile population, power and perseverance of local culture, availability and quality of public services and capacities, forms of social organization, woman role, religious belonging, ethics, level of health and public protection, attitudes and opinions about tourists, language, tradition and gastronomic characteristics;
- *Political organization*. Political structure of a receptive country and its tourist places and areas has a big importance. Factors as the form and principles of socio-political organization, regulations about planning and zoning, measures of tourist stimulation, the role and supervising of national, regional and local tourist organizations, in an important way set effects which are produced by tourism;
- *Level and type of tourist development*. This includes a degree of involving of local community in tourist development, phase and dynamics of tourist development, character and type of tourist attractions, form and quality of accommodation-catering contents and transport, the role of agency and local companies in creating and delivery of tourist services.

CONCLUSION

Having in mind the series of factors which influence on carrying capacity of destinations, it is very difficult, even impossible, to calculate its exact value, even if in practice there were many attempts to operate mathematically carrying capacity. Besides that, the concept of carrying capacity has big significance because it shows that tourism makes serious effects on all subsystems of tourist destinations, natural as well as anthropogenic origin. With all that, this concept has important role in planning the destination development and in managing the tourist activities. Some subsystems have low level of tolerance on the influences of tourist activities, whilst other subsystems that level is on the high level. Identification, cognitions and interpretations as consequence of overcoming of tolerance level, represent important factors of creating the policy and strategies of destination development, with particular emphasis on introduction of control mechanism. Destination has its limits regarding the intensity of tourist development

which is able to absorb because its overcoming produces serious and permanent negative consequences.

We can conclude that following starting points are particularly important for correct understanding and usage of carrying capacity concept in the efforts for creation of sustainable tourism:

- Carrying capacities are changing during the time together with the changes of aims and technological process which are changing during the time together with the changes of objectives and technological processes that concern the field of tourism, where type and extent of tourist traffic decisively influence on the variability of carrying capacity;
- It is indispensable to obtain an agreement on desirable/acceptable ecological, social and economic conditions and effects of tourism development (inside a destination), as well as indicators for following and evaluation of the same;
- To use the concept of carrying capacity as valid mean of destination management, it is necessary to identify precisely the relation between two of them and types of tourist traffic of some area and effects (influences) coming from it;
- It is necessary to make political, legal and financial frame, inside which the managerial authorities and planning services could set the limits of tourist usage of space.

Undoubtedly the carrying capacity would be overcome if some destination is not able to absorb tourist demand. In these situations motivation values and total resource basis of tourist economy could be seriously disturbed, even irretrievably damaged (destroyed). The biggest polemics and disputing of carrying capacity are related to the fact if there is in question unchangeable size that serves as an indicator of maximal permitted level of tourist usage of some space. There is domination of opinions that the concept of carrying capacity is considerably complex than this simplified approach and explanation. Regardless all that, it is very important to accept the point of view that adoption of strategies of tourist development and increasing has to be followed by accepting the fact that tourism produces different natural-ecologic, socio-cultural effects and influences on a destination and on its subsystems with which we have to manage in an optimal way (in the measure in which this is objectively possible). Only this kind of long-time discourses and debates about the concept of carrying capacity could have favourable repercussions regarding the evaluation and managing effects of tourist development.

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